TECHNICAL REVIEW DOCUMENT
for
SIGNIFICANT MODIFICATION
of
OPERATING PERMIT 99OPLA208
issued to:

Evergreen Operating Corporation
Burro Canyon Compressor Station
Las Animas County
Source ID 0710037

Prepared on August 21, 2001
by Michael E. Jensen

I. Purpose

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within this Significant Modification of the Operating Permit proposed for this Site. It is designed for reference during review of the proposed modification by the EPA and during Public Comment. The conclusions made in this report are based on information used in preparing the previous Title V permit, the modification application submitted April 6, 2001, as well as information from Division files. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description:

The source is located northwest of Trinidad, in an area of Las Animas County designated as attainment for all pollutants. There are no Federal Class I designated areas within 100 km of this facility. New Mexico is an affected state within 50 miles of this facility.

This source is classified as a natural gas compressor station defined under the Standard Industrial Classification code 1311. The existing Operating Permit included eight (8) individual 2,961 horsepower internal combustion engine powered gas compressors to deliver the coal-bed methane gas into a pipeline for

sales distribution. Two glycol dehydrators continue to be used to dry the methane gas before entry into the pipeline.

At the time the Operating Permit was issued only four of the eight compressors were installed and operating. The Evergreen Operating Corporation (Evergreen) has elected not to provide two (2) of the four (4) engines that have not yet been installed and has cancelled Construction Permits 98LA0570 and 98LA0571 issued for the two engines that will not be provided at the facility. The Operating Permit was modified to remove the applicable requirements for these two engines.

The existing Operating Permit included two (2) internal combustion engine powered generators used to produce electricity for the site. Commercial power has been provided to the site, and the two (2) generator sets are now provided for emergency use only. The APENs and Construction Permits 95LA219 and 95LA220 for the generators have been cancelled and the applicable requirements removed from the Operating Permit. The two generators are considered standby generators and the associated emissions classify the generators as insignificant sources. The two generators are now shown as insignificant sources in Appendix A of the Operating Permit.

This source is a synthetic minor source for the Prevention of Significant Deterioration (PSD) provisions of Regulation No. 3, Part B, Section IV.D.3. All of the compressor engines will be equipped with an oxidizing catalyst to limit the total facility carbon monoxide emissions to less than 250 tons per year. The following table provides the current facility-wide emissions. The Potential to Emit values are the maximum allowable emissions for the current facility. The actual emissions are those reported for Data Year 2000.

TABLE A

			TONS PER YEAR		
Construction Permit	Equipment	Point	NOx	VOC	CO
00LA331	Cat 1135 HP	BCS1	21.9	5.5	4.6
00LA332	Cat 1135 HP	BCS2	21.9	5.5	4.6
00LA333	Cat 1135 HP	BCS3	21.9	5.5	4.6
96LA0721-2	Cat 2961 HP	CS05	26.0	20.0	14.0
98LA0524	Cat 2961 HP	CS06	26.0	20.0	14.0
98LA0566	Cat 2961 HP	CS07	26.0	20.0	14.0
98LA0567	Cat 2961 HP	CS08	26.0	20.0	14.0
98LA0568	Cat 2961 HP	CS09	26.0	20.0	14.0
98LA0569	Cat 2961 HP	CS10	26.0	20.0	14.0
		TOTALS	**221.7**	**136.5**	**97.85**
Data Year 2000 Actual Emissions					
		TOTALS	**52.4**	**64.0**	**85.0**

III. Emission Sources

The following sources are specifically regulated under the terms and conditions of this Operating Permit for this site.

ENGINES

The following engines were at the facility at the time the previous Title V Operating Permit was issued.

Unit CS05: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN: 1YG00100.

Unit CS06: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN: 1YG00109.

Unit CS07: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN: 1YG00123.

Unit CS08: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN: 1YG00137.

The catalytic emission control units have been installed on Engines CS05 and CS07, and compliance with the emission limits successfully demonstrated. Since this applicable requirement of the Operating Permit was a one time only requirement and has been satisfactorily completed, the requirement is no longer necessary and has been deleted from the Operating Permit with this modification.

The following engines have not yet been installed at the facility and may be provided in the future in response to marketing demands or the company development plan. If the construction for an engine does not commence by a specified date, the Construction Permit expires. An extension for the expiration date was requested and granted. The expiration date shown in the Operating Permit was updated to the current date of February 9, 2002, with this modification.

Unit CS09: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN:NA.

Unit CS10: Caterpillar G3612SITA, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 2,961 HP, SN:NA.

The Title V permit previously issued also included the applicable requirements from Construction Permit 98LA0570 for Unit CS11 (same kind of unit as CS10) and Construction Permit 98LA0571 for Unit CS12 (also the same kind of unit as CS10). These two Construction Permits have been cancelled. This Permit modification includes the removal of these two sources from the Title V permit.

The following engines have been added to the site to drive compressors that may be needed to maintain pipeline pressures for sales. This modification is incorporating the applicable requirements for these engines into the Operating Permit. The descriptive information pertaining to these engines is provided in the following.

BCS1: Caterpillar G3516TALE, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 1,135 HP, SN: 4EK02878.

BCS2: Caterpillar G3516TALE, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 1,135 HP, SN: 4EK02903.

BCS3: Caterpillar G3516TALE, 4-Cycle Lean Burn, Oxidizing Catalyst for Carbon Monoxide Control, Low-NOx Design, Spark-ignition, Turbocharged, Air to Fuel Ratio Controlled, Natural Gas Fired Internal Combustion Engine, Site Rated at 1,135 HP, SN: 4EK02906.

1. Applicable Requirements - Initial Approval Construction Permits 00LA0331 for BCS1, 00LA0332 for BCS2, and 00LA0333 for BCS3 were issued on July 11, 2000. These engines were installed and the startups were reported to be September 15, 2000. Compliance testing has been delayed until pipeline pressures allow testing the engines at full load.

The Construction Permits established the following provisions:

Visible emissions shall not exceed twenty percent (20%) opacity during routine operation of the source.

The emissions of air pollutants from **each** engine shall not exceed the following limitations:

Nitrogen Oxides	21.9 tons/yr and 3650 pounds per month
Volatile Organic Compounds	5.5 tons/yr and 917 pounds per month
Carbon Monoxide	4.6 tons/yr and 767 pounds per month

The consumption of natural gas for each engine shall not exceed 7.04 million standard cubic feet per month and 84.5 million standard cubic feet per year.

The monthly limits in the Construction Permits apply during the first twelve months of operation. Only the yearly limit shall apply after the first twelve months of operation.

Prevention of Significant Deterioration (PSD) requirements shall apply to this source at any such time that this source becomes major solely by virtue of a relaxation in any permit condition. Any relaxation that increases the potential to emit above the applicable PSD threshold will require a full PSD review of the source as though construction had not yet commenced on the source. The source shall not exceed the PSD threshold until a PSD permit is granted.
APEN reporting in accordance with Regulation No. 3, Part A.II.C.

Self-certification of compliance with the provisions of the Construction Permits has been delayed until the engine performance testing has been completed.

2. Emission Factors - Emissions from reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NOx), Carbon Monoxide (CO) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Approval of the emission factors used for estimating the emissions from these

engines is necessary for estimating emissions and determining compliance. It is the Division's policy to express permitted engine emission factors as fuel-based emission factors. The fuel-based emission factors were compared to AP-42 Table 3.2-2 (7/00) for a 4-cycle internal combustion engine with a low NOx design and equipped with an oxidizing catalyst to reduce carbon monoxide emissions. Emission factors equal to or greater than AP-42 factors may be used without the need to validate the numbers by testing. For these engines the nitrogen oxide emissions and the emission factor need to be validated by compliance testing.

Pollutant	EF (lb/MMBtu)	AP-42 (lb/MMBtu)
NOx	0.52	4.08
CO	0.11	0.064*
VOC	0.13	0.12

*CO reduced by 80% due to oxidizing catalyst.

3. Monitoring Plan - The source will calculate emissions on a monthly basis from the fuel consumption and the emission factors listed above. Fuel use for these engines will be determined by allocation. The Division, as shown on the attached grid titled, "Compliance/Scenario Summary - Gas Fired IC Engines", has developed specific monitoring guidance for internal combustion engines located in attainment areas. The emission factor requested for nitrogen oxides emissions is less than the AP-42 factor. Therefore, in accordance with the monitoring grid, the source will be required to conduct the emission calculations and determine fuel use on a rolling twelve-month basis. The Btu content of the natural gas used shall be determined annually using the ASTM analysis method D1826-77 or other Division approved methods.

4. Compliance Status - A current APEN reporting criteria pollutants and HAPs is on file with the Division. This source is currently considered to be in compliance with all applicable requirements.

DEHYDRATORS

Unit D01: PESCO Triethylene Glycol Dehydrator, Design Rated at 25 MMscfd.

Unit D02: PESCO Triethylene Glycol Dehydrator, Design Rated at 25 MMscfd.

The dehydrators are subject to the provisions of 40 CFR Part 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities (Colorado Regulation No. 8, Part E, Subpart HH incorporated by reference). Evergreen requested this modification of the Operating Permit recognize an initial notification of exemption from these provisions was filed with the Division on June 20, 2000. This has been done.

INSIGNIFICANT ACTIVITIES:

Emissions from all insignificant activities shall be tracked on a calendar year basis to ensure the sources remain insignificant and to demonstrate the facility remains a minor source for the PSD provisions. Two emergency generators have been added to this list. The two emergency generators were previously used to provide all the electricity for the facility. Now that commercial power is available and used for site power, the two generators will be maintained for emergency needs only. The limited usage results in insignificant amounts of emissions.

Two (2) dehydrator water tanks, 250 gallons each
Three (3) Diesel fuel tanks, 500, 100 and 1,000 gallons
Gasoline tank, 1,000 gallons
ISO 150, 210 bbl
SAE 40 lube oil, 210 bbl
1540 engine oil, 1,000 gallons
One (1) used lubricating oil tank, 210 barrels above ground
One (1) used lubricating oil tank, 750 gallons below ground
Two (2) used oil tanks above ground, 500 bbl each
Two (2) reboilers for dehydration units
Unit GS01: Caterpillar G3306NA, 4-Cycle Rich Burn, Spark-ignition, AFR, NG fired IC engine, site rated at 142 HP, SN: 7Y2044 powering an electricity generator.
Unit GS02: Caterpillar G3306NA, 4-Cycle Rich Burn, Spark-ignition, AFR, NG fired IC engine, site rated at 142 HP, SN: 7Y2044 powering an electricity generator.

The Operating Permit included a limit on the total value for the nitrogen oxide emissions from the insignificant sources. The limit was set at a value to preclude the total facility Potential-To-Emit for nitrogen oxide emissions exceeding the PSD major source threshold of 250 tons per year. The modifications at the facility have resulted in the Potential-To-Emit for the permitted sources being low enough that the contribution to the total facility Potential-To-Emit from the insignificant sources can no longer result in the total facility nitrogen oxides Potential-To-Emit exceeding the 250 tons per year PSD threshold. There is no longer a need for the limit on the nitrogen oxides contributed by the insignificant sources. The Construction Permit for the permit limit has been cancelled and the applicable requirements removed from the Operating Permit.